

What is claimed is:

1. A method of managing inventory comprising the steps of:
digitally watermarking objects, each watermark including a unique identifier;
recording the unique identifiers in a database; and
updating the database to reflect activity of the watermarked objects.
2. The method of claim 1, further comprising the step of directly applying a watermark to an object surface.
3. The method of claim 2, wherein a handheld printer directly applies the watermark.
4. The method according to claim 1, wherein the activity of the watermarked object includes one of shelving, sale, purchase, return, and damage recognition activity.
5. The method according to claim 1, further comprising the step of reading a watermarked item with a handheld computing device.
6. The method according to claim 1, wherein the unique identifier include a product type identifier.
7. The method according to claim 6, wherein the unique identifier further includes a product count number.
8. A monetary object for use in commerce, the monetary object including a digital watermark comprising a denomination identifier for the monetary object.
9. The monetary object according to claim 8, wherein said watermark further comprises a source identifier.

10. A method of determining the size of a momentary object comprising the steps of:

decoding a watermark embedded in a monetary object, the watermark including data corresponding to the denomination of the monetary object; and

based on the data, determining feedback to indicate the denomination of the monetary object; and

providing the feedback.

11. The method according to claim 10, wherein the provided feedback is an audible announcement of the denomination of the monetary object.

12. The method according to claim 10, wherein the provided feedback comprises Braille typography indicating the denomination of the monetary object.

13. The method according to claim 10, wherein the provided feedback comprises a series of audible sounds.

14. The method according to claim 10, wherein the provided feedback comprises Braille feedback.

15. The method according to claim 10, wherein a handheld computing device decodes the watermark.

16. A method of managing documents comprising the steps of:
digitally watermarking a document to include a document history identifier;
storing the document history identifier in a database, and associating related document history with the document history identifier; and
decoding the identifier from the digital watermark, and indexing the database with the identifier to access the related document history.

17. The method according to claim 16, wherein the related document history comprises document version information.

18. The method according to claim 17, wherein the document version information includes both version information pertaining to the document, and information pertaining to a later version.

19. The method according to claim 16, wherein the related document history comprises one of document version data, creation time, author and last edited information.

20. The method according to claim 16, wherein the identifier comprises at least document version information.

21. A method of managing documents comprising the steps of:
digitally watermarking the document to include a document history identifier;
decoding the identifier from the digital watermark to obtain the document history identifier, the identifier including at least document version information.

22. A method of printing documents in a network, the network comprising a watermark decoding device, a database for at least associating electronic files with unique identifiers, and a printing device, said method comprising:

associating in the database a unique identifier that is digitally watermarked within a physical document with an electronic copy of the document;

decoding the digital watermark with the watermark decoding device to retrieve the unique identifier;

determining the associated electronic copy of the document; and

rendering the electronic copy of the document to the printing device.

23. The method according to claim 22, wherein the watermark decoding device comprises a handheld computing device.

24. The method according to claim 22, wherein the printing device is a printing device located closest to the watermark decoding device.

25. The method according to claim 22, wherein the database comprises a database.

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25. A method of verifying a ticket stored on a handheld computing device, the handheld computing device having a display to display the ticket, the ticket including a digital watermark having an identifier, said method comprising the steps of:

upon presentment of a displayed electronic ticket, decoding the digital watermark from the displayed ticket to retrieve the identifier; and

verifying the ticket based on the identifier.

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26. The method according to claim ²⁶25, wherein said verifying step comprises the step of comparing the identifier to a set of preauthorized identifiers, wherein when the identifier is included in the set of preauthorized identifiers, the ticket is verified.

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27. The method according to claim ²⁶25, wherein said verifying step comprises the step of comparing the identifier to a set of preauthorized identifiers, wherein when the identifier is not included in the set of preauthorized identifiers, the ticket is not verified.

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28. The method according to claim ²⁶25, wherein said verifying step comprises the step of accessing an online-database to determine whether the identifier is listed in the database.

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29. The method according to claim ²⁸28, wherein the on-line database comprises a listing of authorized tickets, categorized by identifiers.

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30. The method according to claim ²⁶~~25~~, wherein the ticket comprises at least one of a ticket image, an authorization code, text, an image, a data file, a text file, an audio signal, a video signal, and an image signal.

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31. A method of gaining entry to an event or movie comprising the steps of:
purchasing a ticket online and receiving an electronic ticket, the electronic ticket being stored in a handheld computing device, the handheld computing device comprising a display, wherein the electronic ticket includes a digital watermark embedded therein;
and

displaying the electronic ticket on the display, and presenting the display to a watermark reading device, which decodes the watermark.

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32. The method according to claim ³²~~31~~, wherein entry is gained when the watermark is verified.

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33. A handheld apparatus to read a digital watermark embedded within an object, said apparatus comprising:

an input device to capture an image of at least a portion of the object;

a display device;

memory including executable software instructions stored therein, the instructions to purchasing a ticket online and receive an electronic ticket, the electronic ticket being stored in the handheld apparatus, and wherein the electronic ticket includes a digital watermark embedded therein, and to display the electronic ticket on the display; and
electronic processing circuitry to execute the software instructions.

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34. A handheld computing device comprising:
a display including a plurality of pixel elements; and

a set of microlens, wherein each of the set of microlens corresponds with a pixel element, wherein the microlens a polarized and are arranged to create a pattern, the pattern corresponding to a unique identifier for the device.

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35. A method of identifying a handheld device, the handheld device comprising a display, said method comprising the steps of:

providing a polarized luminance pattern on the display; and
correlating the pattern with a unique identifier.